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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/922,748	08/07/2001	Norihiko Moriwaki	HITA-0093	9584

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EXAMINER
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KHUONG, LEE T

ART UNIT	PAPER NUMBER
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2665

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

73

<b>Office Action Summary</b>	<b>Application No.</b> 09/922,748	<b>Applicant(s)</b> MORIWAKI ET AL.	
	<b>Examiner</b> Lee Khuong	<b>Art Unit</b> 2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 August 2001.  
 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1,3,5,7,8,10,12 is/are rejected.  
 7) ☒ Claim(s) 2,4,6,9,11 and 13-15 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☒ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>08/07/01</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Momirov (US 6,484,209) in view of Lau (US 6,052,373).

**Regarding claim 1**, Momirov discloses a packet switching apparatus (Fig. 2, 200, *a switching device*) comprising:

N (an integer of 3 or more) slots (Fig. 2, 220, *a plurality of I/O cards*) capable of housing line interface cards to each of which an input line (Fig. 2, 240, *an ethernet input port*) and output line (Fig. 2, 240, *an ethernet output port*) are connected (see col. 4, lines 21-23, *a plurality of I/O cards, 220, can be housed in a switching device, 200 and connected via buses, 216*); and

A packet switch (Fig. 2, 200) for switching packets outputted from k line interface cards housed in k (an integer equal to or greater than 2 and less than or equal to n) slots of the n slots (see col. 4, lines 19-67 and col. 5, lines 1-8, *a received packet at an input port, 240 and forwarded to multiple egress paths, wherein each egress path can be a path linking to a different I/O card/line card*), wherein:

Art Unit: 2665

each of the k interface cards adds a bitmap (*a forwarding control information which could be a multicast group identifier*) a multicast packet inputted from the input line and outputs the multicast packet the packet switch (see col. 9, lines 18-21, lines 44-45, *the forwarding control information is inserted into packet/cell headers*);

the packet switch multicasts the multicast packets to plural line interface cards of the k line interface cards specified in the bitmap (see col. 9, lines 41-54, *the multicast cell is forwarded to the appropriate I/O cards based on a multicast group identifier*);

Momirov does not disclose expressly the length of the bitmap is made variable depending on the value of k.

However, the length of the bitmap is made variable depending on the value of k is well known in the art for grouping line cards for providing a fast and scalable switching system as evidenced by Lau.

Lau discloses a variable length bitmap depending on the value of k (see Fig. 5, col. 6, lines 49-67, *the total number of multicast patterns is the sum of all destination patterns which is depending on the number of k destination SPCs from which makes up the required length of the bitmap*).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the multicast bitmap method of Lau with Momirov.

The suggestion/motivation for doing so would have been to provide a fast and scalable switching system.

Therefore, it would have been obvious to combine Lau with Momirov to obtain the invention as specified in claim 1.

**Regarding claim 5**, Momirov and Lau disclose all claimed limitations set forth in the rejection of claim 1. Lau also discloses means (Fig. 1, IC 12, *a protection control*) for detecting that the line interface cards are housed in the slots (see col. 5, lines 22-45, *fault detection*).

**Regarding claim 7**, Momirov and Lau disclose all claimed limitations set forth in the rejection of claim 1. Lau also discloses the packet switch has a  $n \times n$  switch (Fig. 1, col. 5, line 22).

**Regarding claim 8**, this claim has similar limitations of claim 1. Therefore, it is rejected under Momirov and Lau for the same reasons set forth in the rejection of claim 1.

3. Claims 3, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Momirov (US 6,484,209) in view of Lau (US 6,052,373) and further in view of Long et al. (US 6,728,238), hereinafter referred as Long.

**Regarding claim 3**, Momirov and Lau disclose all claimed limitations set forth in the rejection of claim 1 except a control part for controlling the  $k$  line interface cards and the packet switch; and a management terminal connected to the control part, wherein the value of  $k$  is inputted from the management terminal.

Art Unit: 2665

However, a management terminal to configure/setup/monitor (control part) for a switch is well known in the art for providing administrative and maintaining tasks on the switch as evidenced by Long.

Long discloses a management terminal (Fig. 3, 114, admin terminal) and a control part (Fig. 3, 114) for controlling the k line interface cards (Fig. 3, 102, *a plurality of line cards*, see col. 10, lines 61-66), wherein the value of k is inputted from the management terminal (see col. 11, lines 1-12).

Therefore at the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine Long's management terminal with Momirov and Lau's switch.

The suggestion/motivation for doing so would have been to provide a mean to admin and maintain the switch fabric.

**Regarding claim 10**, this claim has similar limitations of claim 3. Therefore, it is rejected under Momirov, Lau and Long for the same reasons set forth in the rejection of claim 3.

**Regarding claim 12**, this claim has similar limitations of claims 1 and 3. Therefore, it is rejected under Momirov, Lau and Long for the same reasons set forth in the rejection of claims 1 and 3.

*Allowable Subject Matter*

Art Unit: 2665

4. Claims 2, 4, 6, 9, 11, 13-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chiussi et al. (US 5,689,505); Dai et al. (US 6,246,692) are cited to show an apparatus and method of Transmitting Multicast Packet at Packet Switching Apparatus, and Setup Method of Packet Switching Apparatus, which is considered pertinent to the claimed invention.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Khuong whose telephone number is 571-272-3157. The examiner can normally be reached on 9AM - 5PM.

7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 2665

Lee T. Khuong

Examiner

Art Unit 2665

A handwritten signature in black ink, appearing to read 'Huy D. Vu', with a long horizontal flourish extending to the right.

**HUY D. VU**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**